ēKo PRO Series

ēKo Weather Station Suite

FOR ENVIRONMENTAL MONITORING

The Crossbow eKo Pro Series is a wireless agricultural and environmental sensing system for crop monitoring, microclimate studies and environmental research. The ES2000 weather station sensor suite plugs directly into the node providing a true mesh wireless weather station using eKo's unique ESB capability.

This solar powered solution offers an integrated weather sensor suite which combines a rain collector, a temperature and humidity sensor with radiation shield, solar radiation sensor, barometric pressure sensor, and an anemometer in one package. This solution ensures a simple setup with improved performance and reliability.

ES2000

The ES2000 provides the ability to monitor temperature and humidity to calculate chill hours, heat degree days and dew point, and trigger vital frost alerts and alarms. Rainfall and precipitation data is transmitted every 15 minutes to allow for rain alarms and storm warnings.

The data collected from the temperature/humidity sensors along with the solar radiation sensor allow users to display ET (evapotranspiration) data which is an estimate of the water evaporated from plants and provides useful data in determining when and how much to irrigate. Users can use data collected to do forecasting, graphing, set up alerts, etc.

Applications

- Environmental Research
- Precision Agriculture
- Evapotranspiration
- Weather Forecasting
- Irrigation Management
- Rainfall and Dew Point
- Crop Science

ES2000 Features:

- Rain collector
- Temperature & Humidity
- Anemometer
- Wind Speed & Direction
- Barometric Pressure
- Solar Radiation
- Solar-powered
- Wireless Transmission

The eKo system offers web-based data viewing from anywhere, anytime. The familiar and intuitive eKoView interface allows users to gain real-time vital data that gives them the control needed to manage and maintain crop health. Irrigation management, frost protection, disease modeling, and evapo transpiration readings are critical parameters that are monitored 24/7 with this solution and the data collected from the integrated weather sensor suite.

Interfaced directly with the eKo Node, data is transmitted wirelessly through the mesh network to the gateway. Integration of this information with data collected from various locations within the deployment provides the user with a micro level of detail unavailable with standard weather stations. Using only a single port on the eKo Node, users can optimize the sensor data at a given location by adding additional sensor such as soil moisture, leaf wetness, etc., to gain even more knowledge about the environment's conditions. Decisions can be made in regards to an area's specific requirements rather than an arbitrary decision based on information at a generalized location.

(See the eKo sensors datasheet for a list of additional sensors available for the eKo system.)

Sensors	Resolution	Range	Accuracy
Barometric Pressure (Elevation Range -1000' to +12,500')	0.1 mbar	880 to 1080 mbar	1.0 mbar
Rainfall	0.02 mm (Rounded to 1mm at 2000 mm and above)	Day: 0 to 9999 mm Storm: 0 to 9999 mm Month: 0 to 19,999 mm Year: 0 to 19,999 mm	4%
Solar Radiation	1 W/m^2	0 to 1800 W/m^2	5%
Temperature	0.1°C	-40° to +65°C	0.5°C
Humidity	1%	0% to 100%	3%
Wind Direction	1°	0° to 360°	7°
Wind Speed	0.1 m/s 1 km/hr	1 to 67 m/s 3 to 241 km/hr	5%

Ordering Information

Model	Description
ES2000	eKo Weather Station Suite
EK2110	eKo Outdoor Wireless Monitoring System